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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/586,198

Applicant(s)

ITO, TOMOAKI

Examiner

YU ZHAO

Art Unit

2169

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/IS/D)
- Paper No(s)/Mail Date See Continuation Sheet
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :November 13, 2006, January 28, 2008 and September 10, 2008.

DETAILED ACTION

1. **Claims 1-24** are presented for examination.

2. The claims and only the claims form the metes and bounds of the invention.

"Office personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969)" (MPEP p 2100-8, c 2, I 45-48; p 2100-9, c 1, I 1-4). The Examiner has full latitude to interpret each claim in the broadest reasonable sense. The Examiner will reference prior art using terminology familiar to one of ordinary skill in the art. Such an approach is broad in concept and can be either explicit or implicit in meaning.

Priority

3. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). Priority date of **January 21, 2004 and September 30, 2004** are given.

However, the certified copies have not been filed.

Information Disclosure Statement

4. The information disclosure statement (IDS) submitted on **November 13, 2006 and January 28, 2008 and September 10, 2008** is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Drawings

5. The drawings are objected to under 37 CFR 1.83(a) because they **fail to show Fig. 2, item 16, item 17 and 17a** as described in the specification.

Specification, page 35, lines 22-24, recites "As shown in Fig. 2, being installed in the hard disk 10, the particular software 18 reserves a part of the data area 17 as a software management area 19 under the management of the OS." However, Fig. 2 does not clearly show "the data area 17" on the drawing.

Specification, page 35, line 22- page 36, line 27, recites "As shown in Fig. 2...indication clusters 17a in which data of each file relating to the software 18...and the directory area 16 managed by the OS" However, Examiner can not find item 17a and item 16 in Fig. 2.

Fig. 3, Fig. 15A and Fig. 15B are objected for the similar reasons as above.

Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement

sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

6. The disclosure is objected because of the following informalities:

Specification, page 35, lines 22-24, recites "As shown in Fig. 2, being installed in the hard disk 10, the particular software 18 reserves a part of the data area 17 as a software management area 19 under the management of the OS." The recited phrase is vague and indefinite and is not clearly understood by one of ordinary skill in the art.

Specification, page 1, line 26, recites "Fig. 15 is a schematic illustration..."

However, Examiner can not find Fig. 15.

Appropriate correction is required.

Claim Objections

7. **Claims 1-5, 7-12, 14, 16-19, 21, 22 and 24** are objected to because of the following informalities: the term "**adapted to**" is unclear. It has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation

but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. Appropriate correction is required.

8. **Claims 8-15** are objected to because of the following informalities: Claim 8 recites "...and the program being adapted to save by the controller at least one selected from a part of files of the operating system required for cleaning operation and the data cleaning program itself into a main memory when a file contained in the data recording medium is specified, depending on the specified file, so as to perform overwriting operation whereby predetermined data is sequentially written over a corresponding recording area in which the specified data is contained in the data recording medium according to the data cleaning program in either the data recording medium or the main memory in reference to the operating system in either the data recording medium or the main memory, and so as to perform deletion operation whereby the overwritten file is deleted from the management of the operating system when the operating system is not included in the specified file." The recited phrase is vague and indefinite and is not clearly understood by one of ordinary skill in the art.

Claims 9-13 are objected with the similar reasons as above.

Claims 14-15 are objected based on their dependency of their respective independent claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

a. Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

9. Claims 1-24 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter.

As to **claim 1**, "A data cleaning program to be contained in a data processing device..." claimed as computer listings per se, i.e., the descriptions or expressions of the programs, are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer, which permit the computer program's functionality to be realized. It appears to the examiner that applicant should change the above-mentioned limitation to "A program product comprising a recording medium storing a program of instructions that when executed by a computer,..."

Claims 2-24 are rejected with the similar reasons as above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. **Claims 1, 6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. (U.S. Patent No.: US 7,260,697, hereinafter, Okada), in view of Huang et al. (U.S. Patent No.: U.S. 5,410,676, hereinafter, Huang).**

For claim 1, Okada discloses a data cleaning program to be contained in a data processing device having a data recording medium (Okada: column 1, line 65, "a recording medium which stores data;") and a controller for access control over the data recording medium (Okada: column 4, lines 27-35, "The control unit 23 is constituted by a CPU (Central Processing Unit)...controls a motor and a magnetic head (not shown) in accordance with an instruction of the host computer 1"),

the program being adapted to refer to the FAT area to extract addresses of all recording areas in which the release codes are recorded, so as to sequentially overwrite clusters corresponding to the extracted addresses with predetermined data (Okada: column 2, lines 1-5, "an erasing unit which erases the data stored in the recording medium...", lines 31-33, "The recording medium may comprise a data area which stores the data, and an administration area which stores administration information for administrating the data.", where "FAT area" is read on "administration area", column 4, lines 7-13, column 5, lines 50-67, "...writes predetermined data upon the data area and the administration area of the recording medium 21 in accordance with the program stored in the storage unit 22...the control unit 23 determines the predetermined

data...the control unit 23 completely erases all of the data stored in the data area and the administration area of the recording medium 21...").

However, Okada does not explicitly disclose wherein the data recording medium is controlled by the controller by being divided into a data area and a FAT area, the data area having a plurality of clusters in which file data is to be recorded and being adapted to have the file data recorded in one cluster or distributedly among a plurality of clusters,

the FAT area having a plurality of recording areas with addresses specifying the clusters,

each of the recording areas being adapted to have one selected from the following and recorded therein: (a) an address of a cluster in a cluster chain in which data contiguous to a file data recorded in a cluster corresponding to the recording area is recorded and (b) a release code

Huang discloses wherein the data recording medium is controlled by the controller by being divided into a data area and a FAT area (Huang: column 5, lines 13-19, "The external storage 2 contains four areas shown in the memory map of FIG. 6. There is a reserved area 66, a file allocation table (FAT) area 67, a directory area 68 and a data area 69"),

the data area having a plurality of clusters in which file data is to be recorded and being adapted to have the file data recorded in one cluster or

distributedly among a plurality of clusters (Huang: column 5, lines 19-22, "The data area 69 is divided into sectors, which form the access units and clusters."),

the FAT area having a plurality of recording areas with addresses specifying the clusters (Huang: column 5, lines 19-22, "The data area 69 is divided into sectors, which form the access units and clusters. Each of these consists of a plurality of sectors. External access is performed on a cluster basis. The FAT area 67 has locations corresponding to each of the clusters in the data area.", where "addresses" is read on "locations"),

each of the recording areas being adapted to have one selected from the following and recorded therein: (a) an address of a cluster in a cluster chain in which data contiguous to a file data recorded in a cluster corresponding to the recording area is recorded and (b) a release code (Huang: column 5, lines 19-28, "The FAT area 67 has locations corresponding to each of the clusters in the data area. This includes the number of the cluster containing the next portion of the data in the file...The data are not necessarily stored in contiguous locations but may instead be divided up as shown in FIG. 7. The sequence for reading out FILE.sub.-- 3 from the external storage 2 of the computer system 1 is described with reference to FIG. 7.").

It would have been obvious to one of ordinary skill in the art at the time the invention was made to improve upon "Data storage device and method of erasing data stored in the data storage device" as taught by Okada by implementing "Information system using designating areas for retrieving/converting data and directories of different formats storing in optical and magnetic storage" as taught by Huang, because it would provide Okada's program with the enhanced capability of "Image file FILE.sub.-- 3 can be accessed on the basis of the directory information." (Huang: column 5, lines 5-7).

For claim 6, Okada and Huang disclose the modified data cleaning program as defined in claim 1, wherein the data recording medium is a hard disk (Okada: column 3, lines 63-64, "The data storage device will now be explained by employing a hard disk as an example.").

Claim 16 is rejected as substantially similar as claim 1, for the similar reasons.

11. **Claims 2-4 17, 20 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. (U.S. Patent No.: US 7,260,697, hereinafter, Okada), in view of Huang et al. (U.S. Patent No.: U.S. 5,410,676, hereinafter, Huang), and further in view of Imachi et al. (U.S. Patent No.: U.S. 6,272,678, hereinafter, Imachi).**

For claim 2, Okada discloses a data cleaning program to be contained in a data processing device having a data recording medium and a controller for access control over the data recording medium,

the program being adapted to specify a file created by the particular software to extract addresses of all clusters in which data relating to the file is recorded in reference to the FAT data recorded in the software management area and to extract addresses of all recording areas in which the release codes are recorded in reference to the FAT area, so as to sequentially perform overwriting operations in each of which predetermined data is written over clusters with addresses corresponding to logical product of the both extracted addresses (Okada: column 2, lines 1-5, lines 31-33, where "FAT area" is read on "administration area", column 4, lines 7-13, column 5, lines 50-67").

However, Okada does not explicitly disclose wherein the data recording medium is controlled by the controller by being divided into a data area and a FAT area, **the data area having a plurality of clusters in which file data is to be recorded and being adapted to have the file data recorded in one cluster or distributedly among a plurality of clusters,**

the FAT area having a plurality of recording areas with addresses specifying the cluster,

each of the recording areas being adapted to have one selected from the following and recorded therein: (a) an address of a cluster in a cluster chain in which data contiguous to a file data recorded in a cluster corresponding to the recording area is recorded and (b) a release code,

the data area further containing a particular software,

wherein the particular software is adapted to reserve a part of the data area as a software management area, and in storing of a created file, to record updated data of the file in the data area with separating from previous data and to record FAT data indicating the clusters in which the updated data and all the previous data relating to the file are recorded in the software management area as well.

Huang discloses wherein the data recording medium is controlled by the controller by being divided into a data area and a FAT area, the data area having a plurality of clusters in which file data is to be recorded and being adapted to have the file data recorded in one cluster or distributedly among a plurality of clusters,

the FAT area having a plurality of recording areas with addresses pecifying the cluster (Huang: column 5, lines 13-22),

each of the recording areas being adapted to have one selected from the following and recorded therein: (a) an address of a cluster in a cluster chain in which data contiguous to a file data recorded in a cluster corresponding to the recording area is recorded and (b) a release code (Huang: column 5, lines 19-28).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to improve upon "Data storage device and method of erasing data stored in the data storage device" as taught by Okada by implementing "Information system using designating areas for retrieving/convertng data and directories of different formats storing in optical and magnetic storage" as taught by Huang, because it would provide Okada's program with the enhanced capability of "Image file FILE.sub.-- 3 can be accessed on the basis of the directory information." (Huang: column 5, lines 5-7).

However, Okada and Huang do not explicitly disclose the data area further containing a particular software,

wherein the particular software is adapted to reserve a part of the data area as a software management area, and in storing of a created file, to record updated data of the file in the data area with separating from previous data and to record FAT data indicating the clusters in which the updated data and all the previous data relating to the file are recorded in the software management area as well.

Imachi discloses the data area further containing a particular software,
wherein the particular software is adapted to reserve a part of the data area as a software management area, and in storing of a created file, to record updated data of the file in the data area with separating from previous data and to record FAT data indicating the clusters in which the updated data and all the previous data relating to the file are recorded in the software management area as well

(Imachi: column 7, lines 8-13, "Documents for respective versions are stored in the secondary memory unit 106a, a configuration information management table 121 with version up mode in the secondary memory unit 106b, a version information management table 122 in the secondary memory unit 106c, and document management programs in the secondary memory unit 106d.").

It would have been obvious to one of ordinary skill in the art at the time the invention was made to improve upon "Data storage device and method of erasing data stored in the data storage device" as taught by Okada by implementing "Version and configuration management method and apparatus and computer readable recording medium for recording therein version and configuration management program" as taught by Imachi, because it would provide Okada and Huang's modified program with the enhanced capability of "a version and configuration management method and apparatus for managing versions of elements in an aggregate of elements such as a plurality of documents or the like and relation of the versions and a computer-readable recording medium in which a version and configuration management program is stored." (Imachi: column 1, lines 20-25).

For claim 3, Okada, Huang and Imachi disclose the modified data cleaning program as defined in claim 2,

being adapted to write the predetermined data over FAT data corresponding to the clusters on which the overwriting operation is performed among the FAT data recorded in the software management area (Okada: column 5, lines 50-58, "Specifically, the control unit 23 writes predetermined data upon the data area and the administration area of the recording medium 21 in accordance with the program stored in the storage unit 22.").

Claim 4 is rejected as substantially similar as claims 1 and 2, for the similar reasons.

Claim 17 is rejected as substantially similar as claim 2, for the similar reasons.

Claim 20 is rejected as substantially similar as claim 6, for the similar reasons.

Claim 23 is rejected as substantially similar as claim 6, for the similar reasons.

12. **Claims 5** are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. (U.S. Patent No.: US 7,260,697, hereinafter, Okada), in view of Huang et al. (U.S. Patent No.: U.S. 5,410,676, hereinafter, Huang) as applied to claim 1 above, and further in view of Starck et al. (U.S. Patent No.: U.S. 6,314,437, hereinafter, Starck).

For claim 5, Okada and Huang discloses the modified data cleaning program as defined in claim 1.

However, Okada and Huang do not explicitly disclose being adapted to perform the overwriting operation by repeating a predetermined number of writing of same data or various data over the clusters.

Starck discloses being adapted to perform the overwriting operation by repeating a predetermined number of writing of same data or various data over the clusters (Starck: column 6, lines 9-25, "...Then in step 38, the driver overwrites the file with a specified overwrite array. The specified array can be any desired pattern of characters or data and can be user defined or default to a pre-defined pattern...In some implementations, there are seven overwrite iterations...").

It would have been obvious to one of ordinary skill in the art at the time the invention was made to improve upon "Data storage device and method of erasing data stored in the data storage device" as taught by Okada by implementing "Method and apparatus for real-time secure file deletion" as taught by Starck, because it would provide Okada and Huang's modified program with the enhanced capability of "ensure that the original data is securely deleted even if analyzed using destructive testing and advanced detection equipment." (Starck: column 6, lines 22-25).

13. Claims 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. (U.S. Patent No.: US 7,260,697, hereinafter, Okada), in view of Huang et al. (U.S. Patent No.: U.S. 5,410,676, hereinafter, Huang) as applied to claim 1

above, and further in view of Nakagawa et al. (U.S. Patent No.: U.S. 5,819,295, hereinafter, Nakagawa).

For claim 7, Okada and Huang disclose the modified data cleaning program as defined in claim 1.

However, Okada and Huang do not explicitly disclose being adapted to automatically run to start cleaning operation by the controller either at a predetermined time or on condition that another operation has not been continuously performed for a predetermined period of time.

Nakagawa discloses being adapted to automatically run to start cleaning operation by the controller either at a predetermined time or on condition that another operation has not been continuously performed for a predetermined period of time (Nakagawa: column 12, lines 20-29, "The document entity deleting means 98 manages folder deletion information 111 used to set a timing to delete document entities...and entity deleting time information 1113 designating a period of time having elapsed from when the folder was made during which the documents should be stored and after which the documents should be deleted.").

It would have been obvious to one of ordinary skill in the art at the time the invention was made to improve upon "Data storage device and method of erasing data stored in the data storage device" as taught by Okada by implementing "Method and apparatus for real-time secure file

deletion" as taught by Nakagawa, because it would provide Okada and Huang's modified program with the enhanced capability of "whereby a capacity of the disk may be efficiently used and it becomes unnecessary to manually arrange old versions."(Nakagawa: column 12, lines 48-50).

14. Claims 8-15 and 18, are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. (U.S. Patent No.: US 7,260,697, hereinafter, Okada), in view of Starck et al. (U.S. Patent No.: U.S. 6,314,437, hereinafter, Starck), and further in view of Barfield et al. (U.S. Pub. No.: U.S. 2004/0015956, hereinafter, Barfield).

For claim 8, Okada discloses a data cleaning program to be contained in a data processing device having a data recording medium (Okada: column 1, line 65, "a recording medium which stores data;") and a controller for access control over the data recording medium by an operating system (Okada: column 1, lines 16-18, "a hard disk format program such as one included in Windows TM...", where "operating system" is read on "Windows", column 4, lines 27-35, "The control unit 23 is constituted by a CPU (Central Processing Unit)...controls a motor and a magnetic head (not shown) in accordance with an instruction of the host computer 1").

However, Okada does not explicitly disclose the program being adapted to operate on the operating system, the program and the system being contained in the data recording medium,

and the program being adapted to save by the controller at least one selected from a part of files of the operating system required for cleaning operation and the data cleaning program itself into a main memory when a file contained in the data recording medium is specified, depending on the specified file,

so as to perform overwriting operation whereby predetermined data is sequentially written over a corresponding recording area in which the specified data is contained in the data recording medium according to the data cleaning program in either the data recording medium or the main memory in reference to the operating system in either the data recording medium or the main memory, and

so as to perform deletion operation whereby the overwritten file is deleted from the management of the operating system when the operating system is not included in the specified file.

Starck discloses the program being adapted to operate on the operating system, the program and the system being contained in the data recording medium (Starck: column 2, lines 13-29, "...provide enhancement of file system calls to a file system structure of an operating system. In particular, the file system calls can be enhanced to provide real-time secure file deletion on an ongoing basis...In one embodiment, real-time secure file deletion is implemented using a vendor supplied driver (VSD) executing within the installable file system (IFS) of WINDOWS 95."), and

so as to perform overwriting operation whereby predetermined data is sequentially written over a corresponding recording area in which the specified data is contained in the data recording medium according to the data cleaning program in either the data recording medium or the main memory in reference to the operating system in either the data recording medium or the main memory (Starck: column 1, lines 50-63, "...secure" deletion involves overwriting the appropriate space on the storage device with specified overwrite arrays to obscure the original data...a series of overwrites can be performed in sequence with different specified arrays...Conventional targeted secure deletion products allow a user to select a file for deletion and then securely delete that file. Such products can also allow a user to secure delete all free media space on a storage device. Also, conventional secure delete products may allow a user to secure delete virtual memory files (e.g., swap files)."), and

so as to perform deletion operation whereby the overwritten file is deleted from the management of the operating system when the operating system is not included in the specified file (Starck: column 2, lines 13-29, "...a file system call that is intended to perform a function...If the file system call should be processed, supplemental processing is performed to enhance the original file system call...executing within the installable file system (IFS) of WINDOWS 95.", column 5, lines 53-57,

"The file system call can be...a file system delete, write, open, rename, close, read or other file system call...determined whether the type of call intercepted is one that should be processed. If not, then in step 14, the original call is passed on through the file system. If the call should be processed, then in step 16, supplemental processing is performed to enhance the original call. In particular, in step 16, the original call can be enhanced to ensure real-time secure file deletion on the storage device. One implementation of supplemental processing to ensure secure file deletion is provided by FIGS. 4-8...").

It would have been obvious to one of ordinary skill in the art at the time the invention was made to improve upon "Data storage device and method of erasing data stored in the data storage device" as taught by Okada by implementing "Method and apparatus for real-time secure file deletion" as taught by Starck, because it would provide Okada's program with the enhanced capability of "provide advantages over previously developed secure file deletion methods and products." (Starck: column 2, lines 10-12) and "provide enhancement of file system calls to a file system structure of an operating system." (Starck: column 2, lines 14-15).

However, Okada and Starck do not explicitly disclose the program being adapted to save by the controller at least one selected from a part of files of the operating system required for cleaning operation and the data cleaning program itself

into a main memory when a file contained in the data recording medium is specified, depending on the specified file.

Barfield discloses the program being adapted to save by the controller at least one selected from a part of files of the operating system required for cleaning operation and the data cleaning program itself into a main memory when a file contained in the data recording medium is specified, depending on the specified file (Barfield: page 1, paragraph [0013], "...save and store original files or system settings as backup copies just before the original files or settings are modified or deleted by the installation process.")

It would have been obvious to one of ordinary skill in the art at the time the invention was made to improve upon "Data storage device and method of erasing data stored in the data storage device" as taught by Okada by implementing "System and method for automatically de-installing previously installed software based on user defined preferences" as taught by Barfield, because it would provide Okada and Starck's modified program with the enhanced capability of "allows the original files and/or settings to be completely restored when the software is de-installed." (Barfield: page 1, paragraph [0013]).

For claim 9, Okada, Starck and Barfield disclose the modified data cleaning program as defined in claim 8, being adapted to specify all files contained in the data recording medium (Okada: column 1, 33-36, column 4, lines 16-22), and

so as to perform the overwriting operation according to the data cleaning program saved in the main memory in reference to the operating system saved in the main memory (Okada: column 1, line 66-column 2, line 5, column 4, lines 42-45).

being adapted to save by the controller a part of files of the operating system required for cleaning operation and the data cleaning program itself in the main memory when all the files are specified (Barfield: page 1, paragraph [0013]),

For claim 10, Okada, Starck and Barfield disclose the modified data cleaning program as defined in claim 9,

wherein the controller is adapted to unprotect files constituting the operating system (Okada: column 5, lines 59-67, "...erases all the data stored in the data area and the administration area of the recording medium...").

For claim 11, Okada, Starck and Barfield disclose the modified data cleaning program as defined in claim 8,

being adapted to specify, except the operating system among the files contained in the data recording medium, one file selected from (a) the data cleaning program and (b) the data cleaning program and other software and/or data (Okada: column 5, lines 59-67), and

being adapted to save by the controller the data cleaning program itself in the main memory when the corresponding file is specified, so as to perform the overwriting operation according to the data cleaning program saved in the main

memory in reference to the operating system contained in the medium (Okada: column 4, lines 27-56, column 5, 50-67).

For claim 12, Okada, Starck and Barfield disclose the modified data cleaning program as defined in claim 8,

being adapted to specify, except the operating system and the data cleaning program among the files contained in the data recording medium, at least one file selected from the other software and the data (Starck: column 1, lines 50-63), **and**

being adapted to perform the overwriting operation by the controller according to the data cleaning program contained in the medium in reference to the operating system contained in the medium when the corresponding file is specified (Starck: column 2, lines 13-29).

For claim 13, Okada, Starck and Barfield disclose the modified data cleaning program as defined in claim 8,

wherein the data recording medium comprises a hidden area managed by the operating system or a BIOS, the hidden area having an installing function of the operating system and being protected from being overwritten by the data cleaning program (Starck: column 5, lines 33-35, column 9, lines 51-65).

Claim 14 is rejected as substantially similar as claim 5, for the similar reasons.

Claim 15 is rejected as substantially similar as claim 6, for the similar reasons.

Claim 18 is rejected as substantially similar as claim 8, for the similar reasons.

15. Claims 19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. (U.S. Patent No.: US 7,260,697, hereinafter, Okada), in view of Huang et al. (U.S. Patent No.: U.S. 5,410,676, hereinafter, Huang), and further in view of Imachi et al. (U.S. Patent No.: U.S. 6,272,678, hereinafter, Imachi) as applied to claims 2 and 4 above, and further in view of Starck et al. (U.S. Patent No.: U.S. 6,314,437, hereinafter, Starck).

Claim 19 is rejected as substantially similar as claim 5, for the similar reasons.

Claim 22 is rejected as substantially similar as claim 5, for the similar reasons.

16. Claims 21 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. (U.S. Patent No.: US 7,260,697, hereinafter, Okada), in view of Huang et al. (U.S. Patent No.: U.S. 5,410,676, hereinafter, Huang), and further in view of Imachi et al. (U.S. Patent No.: U.S. 6,272,678, hereinafter, Imachi) as applied to claims 2 and 4 above, and further in view of Nakagawa et al. (U.S. Patent No.: U.S. 5,819,295, hereinafter, Nakagawa).

Claim 21 is rejected as substantially similar as claim 7, for the similar reasons.

Claim 24 is rejected as substantially similar as claim 7, for the similar reasons.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YU ZHAO whose telephone number is (571)270-3427. The examiner can normally be reached on Monday-Friday 7:30am-5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tony Mahmoudi can be reached on (571) 272-4078. The fax phone number for the organization where this application or proceeding is assigned is 571-270-4427.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Date: 9/24/2008

/Yu Zhao/

Examiner, Art Unit 2169

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